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THE JOURNAL OF
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COMMUNITY VARIABLES AS PREDICTORS OF INTELLIGENCE AND ACADEMIC ACHIEVEMENT

ROBERT L. THORNDIKE

Teachers College, Columbia University

INTRODUCTION

In 1939 E. L. Thorndike[3] reported the results of a detailed statistical investigation of the facts about American cities which serve to predict the extent to which a city provides a good life for its inhabitants. The criterion of the good life in this research was a rationally weighted composite of measures of the health, education, comfort, etc. of the population. He studied the relationship of the index of 'general goodness' to an index of community wealth and one representing the quality of the population. On the basis of the correlation between these indices, he concluded that 'general goodness' was more directly a function of the qualities of the people in the community than it was of community wealth, and that personal qualities and wealth in combination accounted for most of the predictable 'goodness' of the community.

Even before this time Maller,[2] studying districts in New York City, had found a substantial relationship to exist between school acceleration and community variables. He reported a multiple correlation of .81 between a composite of six economic and health variables and the index of school acceleration.

Thorndike and Woodyard[4] followed up Thorndike's original study with a project to test the children in a sample of cities and studied the relationship between community variables and performance on a standardized intelligence test. The National Intelligence Test was administered to all sixth-grade children in thirty small cities. On the basis of these data, estimates were made of the correlation between N.I.T. score and the indices of

general goodness, personal qualities of the population and per capita income. It was estimated that the correlations were, respectively, .86, .82, and .78.

In none of these early studies were objective measures of intelligence or achievement available for any substantial number of communities. The gathering of test data on such a large scale merely for a research project would, of course, have been prohibitively expensive. It is only as data have become available from large scale testing or test standardization projects that studies of the relationship of community variables to measured intelligence or achievement have become possible. The present analysis is based upon the testing carried out in 1945 to standardize revised forms of the Metropolitan Achievement Test. The study of relationships between community characteristics and the measured intelligence and school achievement of the children in the community seemed both of theoretical interest in describing some of the sociological concomitants of ability and achievement, and of possible practical value in guiding the selection of communities for possible future enterprises of test standardization.

Since the present study was undertaken, a report has been published by Davenport and Remmers[1] describing relationships between social and economic variables for states and the average performance of young men from those states on the A-12 and V-12 qualifying examination. The group taking the test were young men in high school or college trying to qualify for this World War II educational program, but the exact nature of the group, or the degree to which it represented a select fraction of the population of that age in the different states can hardly be determined. Davenport and Remmers studied twelve predictors in relation to the test scores, and found substantial correlations for ten of them. The highest correlations were:

Number of telephones per 1000 population	.83
Per capita income	.81
Value of school property	.76

On the basis of a factor analysis of the test scores and the predictor variables, the authors conclude that an economic factor accounts for the bulk of the variation in test achievement. Certainly, the most predictive variables have an economic

flavor, though the extent to which the economic component is cause and the extent to which it is symptom of underlying population characteristics can hardly be determined from a statistical analysis of this limited number of variables.

SOURCES OF DATA

Data required for the present study were of two types. In the first place, it was necessary to have measures of the level of intellectual ability and scholastic achievement for each community. These measures were obtained from the nation-wide testing that was carried out by the World Book Company as part of the program of establishing norms for the revised forms of the Metropolitan Achievement Test. In the second place, it was necessary to have a variety of educational, economic and sociological facts about each community for which test data were available. These were obtained from the reports of the 1940 census. The nature of these data and the way in which they were prepared for analysis will be discussed in some detail.

As indicated, intelligence and achievement test data were obtained from the standardization testing to provide norms for the revised form of the Metropolitan Achievement Test. These were supplied to the author by the World Book Company.* The standardization testing was carried out in October, 1945. The selection of communities in which to test was necessarily based in part on the willingness of the community to coöperate. However, through its regional agents the World Book Company was able to obtain communities spread over the whole United States, and test returns were received from at least one community in each state. Communities ranged in size from New York City, Oakland, Providence and Atlanta, where testing was carried out in a selected sample of schools, down to many communities with populations of under 2500. In addition, a number of county school systems were included, thus giving coverage of rural as well as urban areas. In all, something in the neighborhood of 500,000 children were tested, spread over some three hundred administrative school units.

* I wish to acknowledge my debt to the World Book Company for these materials, and particularly to Dr. Walter Durost, at that time Director of the Division of Test Research and Service, who called my attention to them and went to some pains to make them available to me.

For a school system to be accepted as a participant in the standardization program, it had to undertake to test all the children in at least three adjacent school grades. Many, however, tested over a wider grade span, and some tested in all grades from II through IX. The only exception to complete testing was in a few of the largest cities. In these cities, testing was carried out in certain selected schools, chosen by an administrator of the system as being representative of the schools of the community as a whole. All testing was carried out at nearly the same time of year, i.e., during October. Original scoring of the test blanks was carried out by the coöperating school systems. However, approximately a twenty per cent sample of test papers was returned to the World Book Company for check scoring. A sample was selected at random from all the papers in a given class, following procedures specified by the publisher. The papers which were returned to the publisher and rescored were the ones used for establishing test norms, and are the ones which provide the data for this study. In specifying the sample to be returned to them, the publishers called for a minimum of six papers from each class, no matter how small the class. With small classes the per cent returned was well over twenty, but with larger classes the returns were held to twenty per cent.

The testing program involved giving each class an appropriate form of the Metropolitan Achievement Test and an appropriate level of the Pintner Intelligence Tests, Verbal Series. The forms which were given to the different grades are as follows:

Grade	Intelligence Test	Achievement Battery
2	Pintner-Cunningham Primary	Primary I
3	Pintner-Durost (Picture Scale)	Primary II
4	Pintner-Durost (Reading Scale)	Elementary
5	Pintner Intermediate	Elementary
6	Pintner Intermediate	Intermediate
7	Pintner Intermediate	Intermediate
8	Pintner Intermediate	Advanced
9	Pintner Intermediate	Advanced

At the time the analyses reported in this study were undertaken, all tests had been scored and all raw scores had been expressed as derived or norm scores. Since the concern in this study was not to be with individual children, but rather with

individual communities, data made available for an analysis were averages. Average IQ was reported in the case of the intelligence test and average standard score in the case of each subtest of the achievement battery for each grade level in each community.

Given data as indicated above for each separate grade group, it was necessary to consolidate them into a single intelligence index and a single achievement index to represent a given community. In the case of the intelligence test, this was very simple. Since the type of IQ reported for the Pintner tests is essentially a standard score, with approximately the same mean and standard deviation at different age levels, it was possible to combine data from different grades directly into a single average IQ. No attempt was made to take account of differences in the number of cases in different grade groups from a single community. These tended to be small in any case, and need not have corresponded too closely to total numbers in the different grades in the community. There seemed little reason to think that they would give a better index for the community than a single unweighted average, and so the unweighted average of the separate grade averages was used. This provided a single index of level of intelligence for the children of the community.

Obtaining a single achievement index for each community was somewhat more indirect and laborious. The grade averages which were available were for each subtest separately, and they were expressed in terms of a single scale of converted scores. The publishers of the Metropolitan Achievement Test have provided conversion tables for translating raw scores on each subtest into standard scores which are anchored to the sixth-grade group. The sixth-grade mean is defined as 200 and the standard deviation is 20. By anchoring all levels of the test for all grades to this reference point, they have tried to facilitate comparisons between different forms and different subtests. The average standard score for a grade group is not directly interpretable as a measure of degree of excellence for the group, or of its deviation from all groups of the same grade. Fortunately, the publishers had also developed percentile norms for each grade, by means of which it was possible to translate a given standard score into a percentile value for that grade. If the assumption of a normal distribution is made, these percentiles

can in turn be translated into normalized standard score values expressing in more nearly equal units the degree of excellence of a particular score relative to its particular grade group. Standard scores with a mean of 50 and a standard deviation of 20 were used. Thus, a particular fourth-grade class group is found to have an average standard score on the arithmetic problems test of 170. This falls at the 70th percentile for fourth-grade children, and becomes a scale score of 60. The scale score designates the degree of excellence of that fourth-grade class as far as the measure of arithmetical reasoning is concerned.

The first step, then, was to translate the score of each grade group on each subtest into the corresponding scale score, representing degree of excellence based on the performance of all children of that grade level. The next problem was what to do with the results of the several subtests, numbering from four to ten depending upon the grade level. One possible procedure would have been to keep the subtests separate and to study the background factors as predictors of success in each separate area of achievement. This possibility was rejected for the initial analysis. It was felt desirable first of all to get a general picture of the factors related to achievement. The scale scores from the separate subtests were, therefore, combined into a single score.

In combining the subtests, the problem was encountered of how to weight the different content areas. This was brought to the fore by the fact that in certain areas, notably arithmetic and reading, there were more than one subtest. Also certain areas appeared for all grades while others, such as science and history, were included only in the test for the higher grades. The procedure which was finally adopted was to weight each subtest equally in computing an average scale score for each grade group, and then to weight each grade group equally in computing an average scale score for each community. Thus equal weight was given to a second-grade group and to an eighth-grade group, though the average was based on four subtests in one case and ten in the other. The final decision was based on the premises (a) that the allocation of number of subtests to an area at a given grade level represented the best judgment of the makers of the test and might well be followed and (b) that each grade's performance has equal significance in appraising the performance

of the community as a whole. The net effect of this decision was to give relatively heavy weight to reading and arithmetic and relatively light weight to the content areas in the over-all score for a community.

In summary, then, the single achievement index was an average scale score. It was obtained by averaging the average scale scores for the separate grades in the community, weighting each grade equally. The grade average scale score was obtained by averaging the grade normalized scale scores for the several subtests. The subtest scores were obtained by using the table of percentile norms which related the universal standard scores for the subtest to percentiles for the particular grade.

After the operations which have been described had been carried out there were available for each community an average IQ and an average achievement scale score. With respect to the achievement scores, however, one additional problem presented itself. It seemed altogether likely that different communities differed considerably as to the age of the pupils in a given grade. Since achievement should be expected to be a function of age as well as of grade reached, it was necessary to take account of this fact. Accordingly, tabulations were made of the average age of pupils in each grade for each community. Distributions were prepared for all communities reporting data for a given grade, and the mean age and standard deviation of ages was determined for that grade. The values for the individual communities were converted into standard scores. The standard scores for the several grades in a community were averaged to yield an average age index for the community. This age index made it possible to hold age constant when reporting correlations with the achievement index.

Facts about the communities included in the study were taken from the reports of the 1940 census. The analysis was restricted to facts available in the 1940 census because of their availability in standard form for all communities of a given size and type throughout the country. Availability was of some importance to the experimenter in carrying out this study. It would be even more important in any use of the results of this study by another worker in order to select communities for norming a new test or in order to interpret the achievement of a particular community in which he was interested. Representative data of a

variety of types were chosen, covering aspects of population structure, educational level, occupational distribution, housing conditions, and economic level. The choice of specific variables was admittedly somewhat arbitrary. It was limited to a considerable extent by what was available in published census reports. Within those limits the further choice represented the judgment of the experimenter as to which seemed meaningful and fruitful to explore. There are many other variables which might have been included and which it may prove fruitful to explore in a later study.

The variables which were studied as predictors of intelligence and achievement are listed below. Each variable is defined sufficiently precisely for it to be reproduced by the reader.

PREDICTOR VARIABLES

Population. (Variable 1) Population in thousands, as given in the 1940 census.

Per cent Native-born White. (Variable 2) This variable was obtained by dividing the number of native-born white by the total population.

Per cent Under 5 Years Old. (Variable 3) Census figures for the number under five years were divided by the total population.

Per cent Over 21 Years Old. (Variable 4) Census figures for the number over twenty-one were divided by the number in the total population.

Median Grade Reached by Adult Population. (Variable 5) This figure, taken directly from census reports, indicates the median school grade reached by adults twenty-five years old and over.

Per cent of Illiteracy in the Adult Population. (Variable 6) The number 25 years and over having four years schooling or less is divided by the total number 25 and over.

Per cent of Adults Who Are High-School Graduates. (Variable 7) Computed as for Variable 6, using those reporting twelve or more years of schooling.

Per cent of Males Employed. (Variable 8) Obtained by dividing the number of males fourteen and over gainfully employed in other than public works (WPA, etc.) by the total number of males fourteen and over.

Per cent of Females Employed. (Variable 9) A similar figure for females fourteen and over, computed in the same way as Variable 8.

Persons per 1000 Engaged in a Profession. (Variable 10) The number of men and women reported as working at a profession was divided by the total population of the community.

Male Domestic Servants per 1000 Population. (Variable 11) The number of males reporting their occupation as domestic service was divided by the total population of the community.

Female Domestic Servants per 1000 Population. (Variable 12) Computed in the same way as Variable 11.

Male Laborers per 1000 Population. (Variable 13) Computed in the same way as Variable 11.

Per cent of Homes Owner-Occupied. (Variable 14) The number of owner-occupied residential units was divided by the total number of residential units in the community.

Per cent of Homes Tenant-Occupied. (Variable 15) Computed in the same manner as Variable 14.

Per cent of Homes Overcrowded. (Variable 16) The number of residence units occupied by more than 1.5 persons per room was divided by the total number of residence units reporting.

Per cent of Homes Needing Major Repair. (Variable 17) The number of residential units needing major repair was divided by the total number which were reported on with respect to this item.

Per cent of Homes Lacking Private Bath. (Variable 18) Computed in the same manner as Variable 17.

Per cent of Owner-Occupied Homes Mortgaged. (Variable 19) The total number of owners reporting mortgages on their homes was divided by the total number responding to the question.

Median Home Rental. (Variable 20) Taken directly from census figures.

Per Capita Retail Sales. (Variable 21) The total of retail sales reported by the stores of the community was divided by the total population.

Per Capita Food Store Sales. (Variable 22) The total retail sales reported by food stores was divided by the total population.

Per Capita Retail Sales for County. (Variable 23) Computed in same way as Variable 21, but based upon the complete county in which the community was located.

Average Pay in Retail Stores. (Variable 24) Total pay to employees in retail trade was divided by the number of such employees reported for the community.

Data for the twenty-four predictor variables and the three community indices were punched on IBM cards and the complete matrix of intercorrelations was computed. These correlations were based on records for one hundred fifty-four towns and cities. Data were also available for twenty-eight county units, and these were used to 'cross validate' the values obtained for the urban units. The correlations among the twenty-four predictor variables are shown in Table I. The correlations of the predictors with the intelligence index, the age index, the achievement index, and the achievement index with age held constant are shown in Table II. This table also gives the mean and standard deviation of each variable and the correlations among the three community indices.

Interest focuses first of all on the correlations of the variables with the intelligence index. Inspection of the appropriate column of Table II shows a considerable range of values, with a number that are statistically significant. With one hundred fifty-four cases a correlation must exceed .20 to be significant at the one per cent level, and eleven of the correlations of community variables with intelligence index surpass this value. Highest correlations are with measures of education of the adult population (.36, −.43 and .33), measures of home ownership and its reverse (.37 and −.39) and with indices of the quality and cost of housing (−.30, −.30, and .32). The signs of the correlations depend upon whether the desirable or undesirable end of the dimension being studied corresponds to a large numerical score. Other significant correlations are with proportion of native-born whites (.28), rate of female employment (−.26) and frequency of professional workers (.28). Some of these variables appear to have fairly obvious direct significance, others to have indirect significance as symptoms of some more basic underlying variable.

The prediction obtainable from combinations of variables was studied by determining the multiple correlation for the most promising combinations of two, three, four, five and six variables, following essentially the Wherry-Doolittle procedure. Results are shown in Table III. The multiple correlation increased fairly rapidly, with the addition of variables, until it reached

TABLE I.—INTERCORRELATIONS OF 24 PREDICTOR VARIABLES (N = 154)

Variable Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1		21	10	27	−75	23	−06	−48	06	−65	−63	−20	52	−54	−27	−08	−09	−16	−07	12	09	02	−05	−32
2	21		−80	01	−03	07	06	−25	−14	−09	−01	11	28	−24	46	37	41	−16	−33	−03	−17	−25	−31	−29
3	10	−80		16	−22	10	05	16	20	02	−05	−09	−09	06	−46	−34	−38	10	32	22	27	32	32	20
4	27	01	16		−60	93	25	03	70	−05	01	−30	23	−27	−08	−12	−30	09	37	34	27	24	18	−12
5	−75	−03	−22	−60		−53	−23	34	−30	48	47	26	−55	58	47	17	38	−04	−25	−19	−24	−23	−18	22
6	23	07	10	93	−53		24	08	75	03	12	−30	18	−21	01	−05	−19	03	29	37	27	14	10	−10
7	−06	06	05	25	−23	24		29	17	10	16	18	05	−04	−25	−13	−33	39	42	12	20	26	34	10
8	−48	−25	16	03	34	08	29		29	45	62	−01	−62	61	21	02	06	16	13	28	15	01	10	32
9	06	−14	20	70	−30	75	17	29		14	22	−28	−01	−01	−06	−07	−25	10	45	29	28	06	11	−04
10	−65	−09	02	−05	48	03	10	45	14		86	12	−23	25	40	21	28	−05	03	04	05	−33	−18	00
11	−63	−01	−05	01	47	12	16	62	22	86		13	−30	33	45	26	38	−13	−06	12	04	−34	−28	03
12	−20	11	−09	−30	26	−30	18	−01	−28	12	13		−01	00	04	18	19	−12	−15	01	05	−05	04	−06
13	52	28	−09	23	−55	18	05	−62	−01	−23	−30	−01		−98	−31	−02	−06	−19	−01	−14	−10	−10	−10	−49
14	−54	−24	06	−27	58	−21	−04	61	−01	25	33	00	−98		33	06	10	18	−01	12	07	05	06	47
15	−27	46	−46	−08	47	01	−25	21	−06	40	45	04	−31	33		45	68	−23	−45	11	−21	−40	−39	00
16	−08	37	−34	−12	17	−05	−13	02	−07	21	26	18	−02	06	45		44	−25	−34	04	−04	−34	−32	−15
17	−09	41	−38	−30	38	−19	−33	06	−25	28	38	19	−06	10	68	44		−61	−75	08	−23	−57	−63	−21
18	−16	−16	10	09	−04	03	39	16	10	−05	−13	−12	−19	18	−23	−25	−61		66	−09	06	49	57	34
19	−07	−33	32	37	−25	29	42	13	45	03	−06	−15	−01	−01	−45	−34	−75	66		−02	33	54	66	14
20	12	−03	22	34	−19	37	12	28	29	04	12	01	−14	12	11	04	08	−09	−02		62	20	18	−02
21	09	−17	27	27	−24	27	20	15	28	05	04	05	−10	07	−21	−04	−23	06	33	62		27	42	−08
22	02	−25	32	24	−23	14	26	01	06	−33	−34	−05	−10	05	−40	−34	−57	49	54	20	27		70	32
23	−05	−31	32	18	−18	10	34	10	11	−18	−28	04	−10	06	−39	−32	−63	57	66	18	42	70		29
24	−32	−29	20	−12	22	−10	10	32	−04	00	03	−06	−49	47	00	−15	−21	34	14	−02	−08	32	29	

TABLE II.—CORRELATIONS OF PREDICTOR VARIABLES WITH COMMUNITY TEST AND AGE INDICES
(Including Means and Standard Deviations)

Variable	Mean	SD	Correlation			
			IQ	Age Index	Achievement Index	Corrected Achievement Index
1. Population in 1000's	28.9	47.3	−.13	−.14	−.06	−.04
2. Per cent native-born white	86.5	10.6	.28	−.15	−.03	.00
3. Per cent under 5 years old	7.2	1.1	−.04	.29	.07	.01
4. Per cent over 21 years old	66.7	3.4	.19	−.35	−.02	.05
5. Median adult school grade reached	9.3	1.1	.36	−.18	.17	.21
6. Per cent of adults illiterate	8.7	5.8	−.43	.37	.01	−.07
7. Per cent adults graduated from high school	31.2	10.0	.33	−.15	.17	.20
8. Per cent employed males 14 years and over	64.8	6.8	.19	−.13	−.02	.01
9. Per cent employed females 14 years and over	24.7	5.8	−.26	.07	−.03	−.04
10. Professional workers per 1000 population	30.5	13.8	.28	−.18	.21	.25
11. Male domestic servants per 1000 population	1.1	1.9	−.13	.13	.07	.04
12. Female domestic servants per 1000 population	17.6	13.0	−.17	.20	.06	.02
13. Male laborers per 1000 population	23.4	12.3	−.06	.09	−.10	−.12
14. Per cent homes owner-occupied	45.1	10.3	.37	−.18	−.03	.00
15. Per cent homes tenant-occupied	51.2	10.3	−.39	.18	.01	−.03
16. Per cent homes overcrowded	5.6	4.8	−.30	.41	.05	−.03
17. Per cent homes needing major repair	14.4	9.7	−.18	.21	−.13	−.18
18. Per cent homes lacking private bath	29.8	16.4	−.13	.46	−.07	−.18
19. Per cent owner-occupied homes mortgaged	44.2	14.5	.16	−.32	.00	.06
20. Median home rental value (dollars)	25.8	9.5	.32	−.43	.09	.18
21. Per capita retail sales	509.4	190.3	.03	.00	.02	.02
22. Per capita food store sales	122.0	33.2	.07	−.10	.11	.14
23. Per capita county retail sales	326.8	97.8	.14	−.24	.02	.07
24. Average annual pay in retail stores	814.2	161.8	.16	−.30	.04	.11
25. IQ index	100.1	4.0		−.51	.46	.67
26. Age index	49.2	7.3	−.51		.19	
27. Achievement	49.8	4.5	.46	.19		

about .55. Beyond that point the increase was very slow, and the ceiling appears to lie between .55 and .60 for the set of variables used in this study.

Though the correlation found between IQ and community variables is appreciable, it is quite a bit lower than values reported by E. L. Thorndike, Maller, and Davenport and Rem-

TABLE III.—MULTIPLE CORRELATIONS AND REGRESSION WEIGHTS — COMMUNITY FACTORS VS. IQ

Variable	Number of variables analysed				
	2	3	4	5	6
1. Per cent of adults illiterate	−.37	−.21	−.16	−.15	−.13
2. Median home rental	+.23	+.27	+.22	+.22	+.18
3. Per cent homes tenant occupied		−.27	−.30	−.20	−.18
4. Professional workers per 1000			+.13	+.18	+.20
5. Per cent employed females				−.17	−.21
6. Per cent employed males					+.10
Multiple R	.482	.528	.551	.554	.561

mers. There are a number of factors which may have had a part in bringing this about. Mention may be made of the following:

1) Substantial population mobility, due to World War II, between the date of the census (1940) and the date of testing (1945).

2) Non-correspondence between census enumeration units and educational units.

3) Attendance of some children, varying in number and type from one community to another, at private and parochial schools.

4) Failure to include Negro children in the testing program in many of the communities having segregated school systems.

5) Use of small communities with possible lowered reliability of all measures.

These seem all to be factors which would tend to obscure the true relationship between community variables and the intelligence measure. The present results should probably be considered an underestimate of that relationship.

To provide some basis for judging whether the predictors which were most effective in the sample of one hundred fifty-

four towns and cities would maintain their effectiveness in another sample of communities they were tested out on twenty-eight county units for which test data were also available. From one point of view the county units are rather unsatisfactory for the 'cross-validation' test, since their characteristics are quite different from those of the urban communities. However, insofar as the same factors are found to be predictive for the counties, the significance of those factors is shown to be more general than would be the case by a test merely in a new group of urban communities.

The most valid single variable, and the most valid combinations of two, three, and four variables were applied to the twenty-eight counties, using the weights shown in Table III. Predicted IQ's were calculated for each county, and these were correlated with the calculated mean IQ. Table IV shows the resulting correlations as well as the mean and standard deviation of each variable.

TABLE IV.—MEAN, STANDARD DEVIATION, AND CORRELATION WITH MEASURED IQ FOR PREDICTED IQ BASED ON COMMUNITY VARIABLES

(Data from 28 County Units)

	Mean	SD	Correlation
Single Most Valid Variable	97.6	3.23	.61
Composite from Two Variables	97.1	2.93	.67
Composite from Three Variables	98.3	3.40	.57
Composite from Four Variables	98.1	3.11	.58
Measured IQ	94.1	6.61	

The results from this analysis are somewhat difficult to interpret, because the county units are substantially more variable in measured IQ than was the case for the urban communities. While the validity of each composite is higher than was the case for the urban communities, the standard error of estimate based on the counties is higher than the standard deviation for the urban communities. Thus, the relative effectiveness of the predictors in the two cases is difficult to estimate. Two things do seem clear. One is that the relative weight to be given to the four variables would be quite different for the county units. This is seen from the fact that the validities resulting from the

three and four variable composites are lower than those resulting from only one or two variables. The other is that the rural-urban factor itself, or something intimately associated with it, is a significant factor in determining intelligence test score, over and above the other predictor factors. This is indicated by the difference between mean predicted IQ and mean measured IQ. The measured IQ's averaged three to four points below the predictions. Apparently the ruralness of the county units constituted a handicap of this size.

TABLE V.—MULTIPLE CORRELATIONS AND REGRESSION WEIGHTS COMMUNITY FACTORS VS. ACHIEVEMENT

Variable	Number of Variables Analysed		
	2	3	4
Professional workers per 1000	+.24	+.27	+.26
Per cent homes needing repair	−.16	−.15	−.18
Per cent employed females		−.11	−.16
Male domestic servants per 1000			+.12
Multiple R	.293	.312	.328

Attention may now be turned to the achievement index. Turning again to Table II, it can be seen that the correlations with achievement index are of quite a different magnitude from those with IQ. The highest correlation obtained, after correction for the age factor, was one of .25 with the number of professional workers per 1000 of population. Correlation with median school grade reached by the adult population is .21. These are the only correlations above .20 and significant at the one per cent level. One other measure, per cent of adults who are high-school graduates, yields a correlation of just .20. There is, then, very little evidence that these community variables have any relationship with the achievement index for the community, as measured by the Metropolitan Achievement Test. Multiple correlations with achievement index are shown in Table V. It appears that the ceiling of multiple correlation lies not far above .30.

At first thought, the relatively very low relationships between community factors and the measure of educational achievement seem quite surprising. One argues that if the educational, sociological and economic factors in a community make a difference, this difference should appear more in the frankly learned school achievements than in the general measure represented by an intelligence test. However, several hypotheses may be offered to account for the low relationships.

In the first place, the Metropolitan Achievement Test focuses upon the more conventional and standard objectives of education. It may be that some of the skills which it covers receive substantially less emphasis in the more favored communities, and that for this reason those communities do no better on these skills than the poorer communities. In order to test this, separate analyses were made of two of the Metropolitan subtest scores. One subtest, paragraph reading, was chosen as representing one that it was felt would be heavily emphasized in all schools. Another, arithmetical computation, was chosen because it was considered representative of the type of skill which would be less emphasized in the favored communities. Correlations were computed between these subtest scores and eleven selected predictor variables which had correlated appreciably with IQ. These correlations are shown in Table VI, together with those for IQ.

The results in Table VI are in general accord with our hypothesis. The correlations for paragraph reading correspond roughly to those for IQ. All but one have the same sign, and they show some correspondence in relative size. If the test weights which gave a multiple correlation of .55 for IQ are applied in the case of paragraph reading, the composite correlates .29 with the reading score. In the case of arithmetical computation, however, the pattern of correlations shows no correspondence with that for IQ. In six of eleven cases correlations are actually reversed in sign; that is, factors associated with high community IQ are associated with low community arithmetic scores. The weights which gave a multiple correlation of .55 with IQ yield a correlation of .02 with arithmetic. These results may be explained in terms of a de-emphasis on such skills as arithmetical computation and spelling in the schools of the more advanced small communities. It appears that shifts in educational emphasis

have produced a situation in which the more conventional tests of achievement no longer provide an adequate basis for comparative appraisal of communities as a whole, though they may still be useful for studying the individual in relation to his own community. Other types of appraisal are apparently needed if the accomplishments of the schools in outstanding communities are to be assessed adequately.

TABLE VI.—CORRELATIONS OF PREDICTORS WITH IQ, PARAGRAPH READING AND ARITHMETIC COMPUTATION SCORES

Predictor	IQ	Paragraph Reading	Arithmetic Computation
Per cent native-born white	.28	.08	−.16
Per cent over 21	.19	.05	.08
Median school grade reached	.36	.33	.07
Per cent of adults illiterate	−.43	−.18	.09
Per cent employed males	.19	.11	−.04
Per cent employed females	−.26	−.06	.05
Professional workers per 1000	.28	.27	.16
Male domestic servants per 1000	−.13	.02	.06
Per cent homes tenant-occupied	−.39	−.13	.13
Per cent homes needing repair	−.18	−.17	−.13
Per cent homes lacking bath	−.30	−.18	−.17

A second possibility is that the community variables analysed in this investigation are not the ones which are the most important determiners of educational achievement. It may be that if variables dealing with school expenditures, school salaries, library facilities and the like had been included, substantially better prediction of the achievement index would have resulted. Unavailability of this type of information for the many small communities made it impossible to test this hypothesis.

Thirdly, the hypothesis may be advanced that fundamentally education is pretty highly standardized in these United States, and that it is primarily in the non-school factors that communities differ. By this hypothesis, the schools would be thought of as a standardizing influence, and educational achievement would be expected to be less responsive to community variables than

would non-school indices. This hypothesis does not lend itself readily to experimental test.

REFERENCES

1) K. S. Davenport and H. H. Remmers. "Factors in state characteristics related to average A-12, V-12 test scores." *J. Educ. Psychol.*, 41, 1950, 110–15.

2) J. B. Maller. "Economic and social correlatives of school progress in New York City." *Teachers College Record*, 34, 1933, 655–70.

3) E. L. Thorndike. *Your City*. New York: Harcourt Brace, 1939.

4) E. L. Thorndike and E. Woodyard. "Differences within and between communities in the intelligence of children." *J. Educ. Psychol.*, 33, 1942, 641–56.

HOW ELEMENTARY-SCHOOL TEACHERS MEET SELECTED SCHOOL SITUATIONS

FRANK SLOBETZ

State Teachers College

St. Cloud, Minnesota

This paper is a résumé of a study made by the writer at the University of Missouri during the school year, 1948–1949. The central problem was to determine what elementary-school teachers did when faced with certain school situations. Included, also, in the study was an attempt to make comparisons of what the elementary-school teachers did on the basis of such teacher characteristics as age, sex, grade levels taught, training, experience, marital status, and parental status. Furthermore, an analysis was made of the teachers' attitudes toward the selected school situations used in the investigation. The chief purpose of the study, therefore, was to determine how competent elementary-school teachers meet selected school situations. More specifically, an attempt was made to answer the following questions:

1) How do the more competent elementary-school teachers of Missouri meet selected school situations?

2) How is the way in which the situations were met related to age, sex, grade level taught, semester hours of training, teaching experience, marital status, and family status?

3) What type of situations do teachers rate the most serious?

4) How are the ratings of the most serious situations related to the several teacher-characteristics classifications?

5) What type of situations do teachers rate the most annoying?

6) How are the ratings of the most annoying situations related to the several teacher-characteristics classifications?

METHOD OF INVESTIGATION

Data were secured by means of an information blank designed to elicit written statements by elementary-school teachers judged by their administrators as the 'more competent' teachers. Seventy per cent of the two hundred eight Missouri public schools of high school district status invited to participate accepted, and nearly seventy per cent of the four hundred twenty-nine

blanks sent out were completed and returned. The participating schools from which returns were received were well distributed over the State of Missouri, representing eighty-six of the one hundred fourteen counties in the State.

The elementary-school teachers selected by their administrators as the more competent may be described briefly as follows: Nearly three-fourths of them were thirty-six years old or older. Practically all of them were female teachers. Grouped by grade levels taught, the participating teachers were almost equally distributed in the two levels, grades I–II–III and IV–V–VI, with about one-sixth comprising the grades VII–VIII level. Nearly two-thirds of them fell into the 120–149 semester hours of training group, the remaining one-third being rather uniformly divided among the three other training groups: 60–89, 90–119, 150 and more semester hours. Over three-fourths had more than ten years of teaching experience. Over ninety-five per cent had six or more years of teaching experience. Over one-half of the teachers were married and, of these, 52.1 per cent were parents.

Teachers were requested to write in the space allotted below each of the forty-five situations what they had done about it if they had met it or one similar to it. They were instructed, also, to write 'Have not met' if they had not encountered a situation or one similar to it in their teaching experience.

The forty-five situations were created to include the basic behavior problems reported in Wickman's[1] study. In addition, the list included five exemplary behavioral situations.

The situations, classified by types, are presented below:

Type I. Related to Classroom Decorum.—Fred would not sit still. He was in and out of his seat several times in about as many minutes. Richard played a practical joke on one of the girls, causing general laughter. Mary and Jane were giggling and interfering with the work of the group. You had to leave your room for a few minutes; when you came back you found the children quite noisy and milling about the room. Mary whispered at every opportunity. John and Bill were shooting paper

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[1] E. K. Wickman, *Children's Behavior and Teachers' Attitudes*, New York: The Commonwealth Fund, Division of Publications, 1928.

wads (or throwing things) while you were busy with another group. Ann was inclined to monopolize class time by talking about her vacation trip.

Type II. Related to Authorities or School Regulations.—Johnny was excused to go to the rest room and was gone for twenty minutes. Mary was chewing gum. Jimmy had the habit of throwing his coat on the rack or on the floor. Four of your boys were playing marbles for 'keeps.' Mary was rude to you while you were talking to her about her carelessness. Sam ignored your suggestion that he clean up his desk.

Type III. Related to Application to School Work.—Albert was physically lazy. He showed little interest in his school work. Bill came to school with dirty face and hands. Jack was fifteen minutes tardy one morning. Eddie was careless and untidy in his work. After you explained clearly what the group was to do, Bill later asked you for the same information. George was a non-conformist—he wanted to do things his way.

Type IV. Related to Aggressive and Antagonistic Behavior.—Ann was very critical of others. June dominated her play group, and bossed her classmates with a dictatorial hand. Frank flew into a temper tantrum when he couldn't have his way. Max was a bully; he liked to torment smaller children. Mary liked to tattle on others. John and Jim had a quarrel over sharing some materials. Howard and Sam had a fight on the playground. John deliberately broke his paint brush, issued to him by the school.

Type V. Related to Morality and Integrity.—Jim told highly imaginative tales about his activities. James played with his genital organs during the reading period. You discovered that Mary was cheating on the examination. Johnny took an apple from one of the lunch pails. Betty took a nickel that did not belong to her. Richard used profane language while on the playground. Jack wrote a vulgar note to one of the girls.

Type VI. Related to Withdrawing and Recessive Behavior.—Bob was a shy newcomer. He found it difficult to adjust. Ben was a physical coward; he was afraid to stand up for himself. Mark was a quiet boy and never bothered anyone. Eleanor was suspicious of her classmates. She told you that they were talking about her. Richard's feelings were hurt because he was not chosen to serve as librarian.

Type VII. Related to Exemplary Behavior.—Sam held the door open for his classmates as they came in the building. A group of your boys volunteered to lend their basketball to the girls. John found a dollar bill in the school building and brought it to you. Mary told you that it was her fault that the scissors were lost and that she was sorry. Jane shared her new story book with her classmates.

Since teachers were asked to report actual treatment of the situations in an open-question type of inquiry, it was necessary to analyze the statements to discover the basic techniques involved. The pattern of treatments presented in this study evolved outrightly from this method of treating the data provided by the teachers.

FINDINGS

In the original dissertation, the writer organized the findings by devoting one chapter to each of the seven types of situations. Each chapter presented one comprehensive table showing specifically how all teachers met each of the indicated situations. Included, also, in each chapter were seven other tables which showed comparative percentages by teacher-characteristics classification of how the elementary-school teachers met the situations related to the indicated types. One chapter was devoted to the attitudes of teachers toward the forty-five situations.

For purposes of this paper, some of the data have been re-organized to present in briefer form certain of the more important findings. Table I shows how two hundred ninety elementary-school teachers met the forty behavior-problem situations. One hundred thirteen specific measures, classified under thirteen types, were reported employed by the teachers. On a punitive-constructive dichotomy basis, Table I reveals that slightly more than one-fourth of all measures used were punitive in nature, and slightly less than three-fourths were constructive in nature. Physical Force, Censure, Overtime or Extra Work, Deprivation, Sent or Referred to Office, and Penalties were considered punitive in nature. Ignored or Did Nothing, Verbal Appeal, Group Reaction, Constructive Assistance, and Commendation were considered constructive in nature. Rectification or Reparation was considered neither.

TABLE I.—HOW THE 290 ELEMENTARY-SCHOOL TEACHERS MET THE FORTY BEHAVIOR-PROBLEM SITUATIONS

(Figures in parentheses give frequency)

How Situations Were Met	Per cent
Physical Force (134):	1
Spanked (106), Shook (15), Tied in seat (6), Slapped (5), Obstructed pupil's desk (1), Held pupil (1)	
Censure (1088):	10
Scolded (173), Commanded (114), Warned (68), Refused to listen (62), Used saturation (56), Refused to help (54), Secured apology (52), Reciprocated (45), Shamed (36), Questioned (36), Looked at (34), Identified publicly (29), Indicated disappointment (26), Required sharing with group (23), Destroyed item (21), Refused to accept work (20), Embarrassed (17), Used sarcasm (17), Required pupil to stand near his seat (15), Lectured (14), Required repeat writing (14), Stood near pupil (13), Refused to recognize (13), Indicated privately discovery (10), Shook head in disapproval (10), Seated pupil near teacher (9), Required heads on desks (8), Threatened (8), Demanded respect (8), Required standing in corner (8), Stopped and waited (8), Soaped mouth (7), Ridiculed (6), Sent home (6), Hushed (5), Secured confession (4), Displayed poor work (4), Scoffed at (4), Indicated displeasure (4), Kept list of names (4), Made comparison (4), Laughed at (4), Required repeating to teacher (3), Impersonated pupil (3), Indicated surprise (2), Sent for parent (2), Required keeping coat on (1), Required use of broken item (1), Required covering of eyes with hands (1), Required putting glue and cotton on fingers (1), Required pupil to stick gum on end of nose (1).	
Overtime or Extra Work (486):	4
Required to repeat work (189), Required making up time lost (121), Kept in (91), Assigned extra work (70), Required to clean up (15).	
Deprivation (1044):	10
Deprived recreational time (223), Isolated (171), Rearranged seating (150), Denied privilege (112), Denied use of materials (95), Omitted from group activity (94), Assigned less attractive work (74), Restricted participation (68), Removed from class (41), Took away article or item (16).	

TABLE I.—*Continued*

How Situations Were Met	Per cent
Sent or Referred to Office (65):	0.6
Penalties (99):	1
Demerits (95), Money fines (3), Non-promotion (1).	
Rectification or Reparation (214):	2
Required replacement (150), Required payment (56), Required giving up of personal article (6), Required double replacement (1), Paid for by teacher (1).	
Ignored or Did Nothing (512):	5
Verbal Appeal (2586):	26
Used reasoning (1771), Reminded (318), Made simple inquiry (218), Requested cessation (162), In behalf of the group (109), In behalf of teacher's regard (8).	
Group Reaction (143):	2
Constructive Assistance (3167):	31
Tried to create opportunity for successful participation (638), Tried to provide appropriate activity (338), Helped through pupil assistance (279), Suggested Correction (207), Conferred with or contacted parent (206), Created situation to provide insight (185), Varied procedure or participation (152), Talked to group about situation or condition in general (151), Tried to provide incentives (148), Accepted situation with group (132), Served as arbiter (96), Assigned special responsibility (95), Respected his ideas and held him responsible for group coöperation (82), Repeated directions (81), Helped directly to meet it (63), Tried to arouse emulation (57), Arranged for play with his peers (50), Suggested hand activity (43), 'Kidded' pupil, (33), Repeated later (24), Listened to pupil (17), Saw that bully met his match (16), Instituted immediate class work (10), Suggested pupils work it out amicably (8), Organized a club (8), Held frank discussion (7), Assigned committee work (7), Secured reconciliation (6), Suggested another time and place (6), Created attention-getting situation (8), Deferred action (3), Suggested substitute (3), Provided protection for pupil (3).	
Commendation (57):	0.5
Personal (39), Public (11), Used as teaching situation (4), Via report card (3).	

TABLE I.—*Continued*

How Situations Were Met		Per cent
Searched for Reasons of Behavior (620)		6
Tried Many Things Unsuccessfully (29)		0.3
Total Number of reports on situations met	(10244)	99.4
Reports of non-encounter	(1356)	
Total number of reports	(11600)	

Table II presents a comparison of how the teachers—classified by age, sex, grade levels taught, semester hours of training, years of teaching experience, marital status, and parental status—met the forty behavior-problem situations. The percentages shown were computed on the basis of the number of situations encountered.

Percentage differences within each classification and for each type of situation and for all situations considered together were treated statistically for significance. Critical ratios were determined by dividing the differences by the respective standard errors of the differences. No critical ratios indicating significance at levels ranging from five per cent to one per cent were found for any of the differences between percentages shown in Table II. Critical ratios approaching significance were found as indicated below:

Type I	
(25 or Less)–(26–35)	CR: 1.4
(46 or More)–(26–35)	CR: 1.6
(120–149)–(90–119)	CR: 1.4
Type V	
(1-2-3)–(7–8)	CR: 1.4

On the basis of Tables I and II, the following summary statements may be made:

1) In meeting situations related to Classroom Decorum, teachers used constructive measures slightly more frequently than they employed punitive ones.

2) In meeting situations related to Authorities or School Regulations, teachers employed constructive methods about twice as frequently as they used punitive measures.

TABLE II.—A COMPARISON OF HOW 290 ELEMENTARY-SCHOOL TEACHERS MET FORTY BEHAVIOR-PROBLEM SITUATIONS IN TERMS OF PERCENTAGES OF CONSTRUCTIVE MEASURES USED

Classification of Teachers	No. of Teachers in Each Class	Per cent of Constructive Measures Used According to the Six Types of Situations						
		I	II	III	IV	V	VI	All Types
Ages								
25 or Less	11	64	61	80	67	71	97	73
26–35	70	48	67	79	61	62	96	69
36–45	120	53	65	80	59	67	96	70
46 Plus	89	56	66	77	62	68	96	71
Sex								
Female	277	53	65	79	60	68	97	70
Male	13	60	68	72	72	64	95	72
Grade levels taught								
1-2-3	117	54	69	83	60	71	96	72
4-5-6	127	52	64	77	62	66	96	70
7-8	46	52	60	74	61	59	96	67
Semester hours of training								
60–89	34	49	64	80	58	63	96	68
90–119	38	47	60	74	64	66	97	68
120–149	181	59	66	79	60	67	97	71
150 Plus	37	54	69	80	66	72	98	73
Years of teaching experience								
2–5	12	67	63	78	56	65	97	71
6–10	52	52	64	76	61	71	96	70
10 Plus	226	53	66	80	61	66	96	70
Marital status								
Single	123	54	67	80	62	60	96	72
Married	167	53	65	77	60	65	96	69

TABLE II.—*Continued*

Classification of Teachers	No. of Teachers in Each Class	Per cent of Constructive Measures Used According to the Six Types of Situations						
		I	II	III	IV	V	VI	All Types
Married								
With Children	87	50	61	77	59	62	97	68
Without Children	80	55	67	79	59	68	97	71
All Teachers		54	66	79	61	67	97	71

Type I Seven situations related to Classroom Decorum.
II Six situations related to Authorities or School Regulations.
III Six situations related to Application to School-work.
IV Eight situations related to Aggressive and Antagonistic Behavior.
V Seven situations related to Morality and Integrity.
VI Six situations related to Withdrawing and Recessive Behavior.

3) In meeting situations related to Application to School Work, teachers used constructive measures about four times as often as they used punitive measures.

4) In meeting situations related to Aggressive and Antagonistic Behavior, teachers used constructive measures about twice as often as punitive ones.

5) The constructive methods employed by all teachers in meeting situations related to Morality and Integrity constituted nearly seventy per cent of all measures used.

6) Nearly ninety-seven per cent of the measures used by teachers in meeting situations related to Withdrawing and Recessive Behavior were constructive in nature.

7) In terms of teacher-characteristics classifications, no significant differences were found in how teachers met the situations, considered by types or by all situations as a whole.

8) The two hundred ninety teachers made 11,600 reports on how they met the forty behavior-problem situations. Of this number, eleven per cent were of non-encounter. Types of measures employed by all teachers in connection with the forty situations, in order of frequency of use, were: Constructive Assistance (thirty-one per cent), Verbal Appeal (twenty-six per cent), Censure (ten per cent), Deprivation (ten per cent), Searched for Reasons of Behavior (six per cent), Ignored or Did Nothing (five per cent), Overtime or Extra Work (four per cent), Rectification or Reparation (two per cent), Group Reaction (two per cent), Physical Force (one per cent), Penalties (one per cent), Commendation (0.5 per cent), and Sent or Referred to Office (0.6 per cent). Slightly more than one-fourth of the measures employed in meeting the forty situations were punitive in nature and slightly less than three-fourths were constructive in nature.

In order to assemble pertinent data about the treatment of the situations related to Exemplary Behavior, Table III was constructed. How the teachers handled these situations is reported in terms of six categories and in terms of frequency by per cents. As Table III indicates, teachers used the Commendation technique ninety-four per cent of the time. In terms of teacher-characteristics classifications, no significant differences were found in the use of the Commendation technique. A significant difference (CR: 2.64) at one per cent level was found for Ignoring or Doing Nothing between teachers with ten years or more teaching experience and those with two to five years of experience.

ATTITUDES

In addition to the written reports on how they had met the forty-five situations, the participating teachers were asked to indicate the most serious, the second most serious, and the third most serious situations. They were also asked to indicate the most annoying, the second most annoying, and the third most annoying situations. In effect, the teachers were asked to indicate rank orders from one through three for the three most serious and the three most annoying situations. Two hundred eighty teachers indicated their attitudes in the manner prescribed. In order to consolidate the three attitudinal expressions

TABLE III.—A COMPARISON OF HOW 290 ELEMENTARY-SCHOOL TEACHERS MET FIVE SITUATIONS RELATED TO EXEMPLARY BEHAVIOR

Classification of Teachers	No. of Teachers in Each Class	How Teachers Met Situations and Per Cents of Frequency					
		A	B	C	D	E	F
Ages							
25 or Less	11	0	12	2	0	0	86
26–35	70	0.3	4	1	0.6	1	93
36–45	120	1	1	1	0.2	0.5	96
46 Plus	89	1	3	1	0.2	0.2	94
Sex							
Female	277	1	2	1	0.3	0.6	95
Male	13	0	3	0	0	0	97
Grade Levels Taught							
1-2-3	117	0.7	3	0	0	0.4	96
4-5-6	127	1	4	2	0.7	0.5	92
7-8	46	0.5	3	2	0	1	93
Semester Hours of Training							
60–89	34	0	4	3	0.6	0.6	92
90–119	38	0	4	0	0.6	0	95
120–149	181	1	3	1	0.2	0.7	94
150 Plus	37	0.7	2	1	0	0.7	95
Years of Teaching Experience							
2–5	12	0	0	2	0	0	98
6–10	52	0	6	1	0.4	0.4	92
10 Plus	226	1	3	1	0.3	0.7	94
Marital Status							
Single	123	0.9	2	2	0.5	0.7	94
Married	167	0.9	4	1	0.1	0.5	94
Married							
With Children	87	0.8	3	1	0.3	0.3	94
Without Children	80	1	4	0.8	0	0.8	93
All Teachers		0.9	2.7	1.	0.3	0.6	94

Key: A—Rectification or Reparation. B—Ignored or Did Nothing. C—Verbal Appeal. D—Group Reaction. E—Constructive Assistance. F—Commendation.

into a single index, the three ranks were weighted by multiplying the frequencies for ranks 1, 2, and 3 by 3, 2, and 1, respectively.

These attitudinal indices were converted into percentages as Table IV indicates. This table reveals that slightly over one-half of the ratings as to seriousness were directed at situations related to Morality and Integrity. About one-third of the ratings were divided almost equally between situations related to Aggressive and Antagonistic Behavior and situations related to Withdrawing and Recessive Behavior.

Table IV also reveals that over one-third of the ratings as to annoyance involved situations related to Classroom Decorum. Situations related to Application to School Work and those related to Aggressive and Antagonistic Behavior were rated almost as annoying as the Classroom Decorum type.

TABLE IV.—PERCENTAGE DISTRIBUTION OF 280 ELEMENTARY-SCHOOL TEACHERS' RATINGS OF THE THREE MOST SERIOUS AND THE THREE MOST ANNOYING SITUATIONS CLASSIFIED BY TYPES OF SITUATIONS

Types of Situations	Most Serious	Most Annoying	CR
Situations Related to Morality and Integrity	50.4	3.0	14.8
Situations Related to Aggressive and Antagonistic Behavior	17.1	24.9	2.27
Situations Related to Withdrawing and Recessive Behavior	16.1	5.6	4.0
Situations Related to Application to School Work	13.1	26.5	4.0
Situations Related to Authorities or School Regulations	2.1	4.3	1.4
Situations Related to Classroom Decorum	1.2	35.7	17.0
Total Per Cents	100.0	100.0	

The critical ratios shown in the table were computed by dividing the percentage differences between corresponding types of situations by the respective standard errors of the differences. All are significant at the one per cent level, except two; and one

of these approaches significance at the two per cent level. These statistics indicate that the teachers considered situations related to Morality and Integrity and to Withdrawing and Recessive Behavior more serious than annoying; and situations related to Classroom Decorum, to Application to School Work, and to Aggressive and Antagonistic Behavior as more annoying than serious.

For comparative purposes, Table V was constructed. Teachers' ratings of the three most serious situations were converted to percentages and compiled by classifications of teachers and by types of situations. Statistical treatment for significance of percentage differences within each classification and for each type of situations produced the following significant critical ratios:

Type V	CR	Level
(60–89)—(150 or more)	1.95	5%
(90–119)—(150 or more)	2.5	2%
(120–149)—(150 or more)	2.1	5%
Type VI		
(26–35)—(25 or less)	2.34	5%
(36–45)—(25 or less)	2.68	1%
(46 or more—(25 or less)	2.40	2%
(150 or more)—(60–89)	2.55	2%
(150 or more)—(90–119)	2.10	5%
(150 or more)—(120–149)	2.38	5%

With respect to situations related to Morality and Integrity (Type V), teachers with semester hours of 60–89, 90–119, and 120–149 considered situations of this type more serious than teachers with 150 or more semester hours.

Critical ratios for situations related to Withdrawing and Recessive Behavior (Type VI) indicate that the older groups of teachers considered this type of situation more serious than the youngest age group, 25 or less. Significant differences were also found for Type VI in the semester hours of training classification. Teachers with 150 or more hours rated these situations more serious than teachers in the three other groups.

As Table VI shows, teachers' ratings of the three most annoying situations were converted into percentages and compiled by

TABLE V.—PERCENTAGE DISTRIBUTION OF 280 ELEMENTARY-SCHOOL TEACHERS' RATINGS OF THE THREE MOST SERIOUS SITUATIONS CLASSIFIED BY TYPES OF SITUATIONS

Classification of Teachers	Number of Teachers	Percentages for Each Type Situation					
		I	II	III	IV	V	VI
Ages:							
25 or Less	10	0	3.3	6.7	20	68.3	1.7
26–35	66	1.3	4.3	17.4	15.4	45	16
36–45	118	.4	1.7	13.1	16.8	51	17
46 Plus	86	2.2	1.4	11.3	17.6	50	16
Sex							
Female	267	1.2	1.8	13.2	17.6	50	16.4
Male	13	0	12.3	19.2	19.2	31.5	17.8
Grade Levels Taught							
1-2-3	111	1.7	1.8	13	17.7	49.5	16.4
4-5-6	125	.7	2.4	12.5	16.6	50.5	17.4
7-8	44	1.2	3.1	16.8	16.9	50	11.9
Semester Hours of Training							
60–89	33	1	2.6	14.2	17.8	54.8	9.6
90–119	39	0	7.8	9.1	10	59.7	13.4
120–149	173	.9	1.8	15.7	17.7	50.2	13.8
150 Plus	35	3.8	2.4	6.7	21.4	31.9	33.8
Years of Teaching Exp.							
2–5	12	0	8.2	17.8	17.8	45.2	11
6–10	52	1.6	4.2	11.2	16	52.2	14.8
10 Plus	216	1	1.5	13.9	17.2	49.7	16.7
Marital Status							
Single	121	.7	2.4	15.7	19.6	44.2	17.5
Married	159	1.6	2.2	11.7	15.2	54.2	15.1
Married							
With Children	83	2.5	1.4	10.4	14.5	56	15.1
Without Children	76	.9	3.1	13.2	15.6	52	15.2

TABLE VI.—PERCENTAGE DISTRIBUTION OF 280 ELEMENTARY-SCHOOL TEACHERS' RATINGS OF THE THREE MOST ANNOYING SITUATIONS CLASSIFIED BY TYPES OF SITUATIONS

Classification of Teachers	Number of Teachers	Percentages for Each Type Situation					
		I	II	III	IV	V	VI
Ages:							
25 or Less	10	38.3	10	25	21.7	5	0
26–35	66	37.4	6.4	28.2	20.8	1.6	5.6
36–45	118	32.4	3.3	29.2	25	3.4	6.1
46 Plus	86	37	3.4	23.1	27.9	3.4	5.2
Sex:							
Female	267	36.1	4.1	26.6	25.1	2.5	5.6
Male	13	31	7	21.1	23.9	14.1	2.8
Grade Level Taught							
1-2-3	111	34	4.5	24.5	27.2	3.3	6.5
4-5-6	125	36.4	4.1	27.3	23.5	3.5	5.2
7-8	44	41.1	4.4	25.8	23.8	.8	4.1
Semester Hours of Training							
60–89	33	46.6	4.7	23.6	16.2	1.6	7.3
90–119	39	40	5.7	23.2	30.7	3.5	.9
120–149	173	36.1	4.5	28.5	22.3	2.2	6.7
150 Plus	35	31.4	1.5	20	36.3	7.8	2.9
Years of Teaching Experience							
2–5	12	42	7.3	23.2	24.6	2.9	0
6–10	52	42.1	5	22.8	25.5	1	3.6
10 Plus	216	34.1	3.7	25.2	27	3.5	6.3
Marital Status							
Single	121	34.7	5.2	25.3	27.6	1.8	5.4
Married	159	36.4	3.6	27.5	23.1	3.8	5.6
Married							
With Children	83	41.5	3.5	24.6	20.9	3.9	5.6
Without Children	76	31.3	3.8	30.4	25.3	3.6	5.6

classifications of teachers and by types of situations. Statistical treatment for significant percentage differences indicates the following critical ratios:

	CR	Level
Type IV		
(150 or more)—(60–89)	1.94	5%
Type VI		
(36–45)—(25 or less)	2.76	1%
(46 or more)—(25 or less)	2.17	5%
(10 years or more)—(2–5 years)	3.80	1%

Teachers with 150 or more semester hours considered situations related to Aggressive and Antagonistic Behavior more annoying (approaching significance) than teachers with 60–89 semester hours.

The most significant critical ratios were found in connection with situations related to Withdrawing and Recessive Behavior. Teachers in age classification, 36–45, considered these situations more annoying than teachers of 25 or less, as did the oldest group of 46 or more. The most experienced teachers, 10 years or more, considered this type more annoying than teachers with two to five years of experience.

RANK ORDER DATA

Teachers' ratings of the most serious situations in rank order are as follows: (1) stealing nickel, (2) sex irregularity, (3) cheating on examination, (4) vulgar note, (5) daydreaming, (6) temper tantrum, (7) laziness, (8) bully, (9) non-conformity, (10) stealing apple, (11.5) suspiciousness, (11.5) profanity, (13) quiet behavior, (14) shyness, (15) domination, (16) cowardice, (17) critical behavior, (18) inattention, (19) rudeness, (20.5) carelessness, (20.5) marble playing, (22.5) noisiness, (22.5) property destruction, (24) fighting, (25) imaginative tales, (26) tattling, (27) monopolizing class time, (29.5) overactivity, (29.5) chewing gum, (29.5) ignoring teacher, (32) quarreling.

Teachers' rating of the most annoying situations in rank order are as follows: (1) inattention, (2) tattling, (3) whispering, (4) overactivity, (5) giggling, (6) daydreaming, (7) noisiness, (8) laziness, (9) bully, (10) temper tantrum, (11) non-conformity,

(12) paper wads, (13) carelessness, (14) domination, (15.5) chewing gum, (15.5) critical behavior, (17) rudeness, (18) monopolizing class time, (19) cheating on examination, (20) suspiciousness, (21) tardiness, (22) fighting, (23) property destruction, (24) profanity, (25) vulgar note, (26.5) quarreling, (26.5) throwing coat on floor, (29) ignoring teacher, (29) sex irregularity, (29) practical joke, (31) undue absence from class, (32) cowardice, (34.5) uncleanliness, (34.5) imaginative tales, (34.5) hurt feelings, (34.5) stealing nickel.

The rank-difference correlation between the two rank-order ratings is .02.

CONCLUSIONS

On the basis of the findings and within the framework of limitations indicated in the study, the more important conclusions seem to be those presented below.

1) In meeting behavior-problem situations, the designated competent elementary-school teachers operated from a constructive point of view, with some evidence of searching for the reasons of behavior when certain situations were faced.

2) Situations of the Exemplary type were generally met by the designated competent teachers with specific forms of commendation.

3) Teachers employed the highest percentages of constructive measures in connection with Withdrawing and Recessive Behavior type of situations, and the lowest with situations related to Classroom Decorum.

4) In terms of the seven teacher-characteristics classifications, no significant differences were found in the way teachers treated the situations, either by types of situations or by all forty behavior-problem situations considered as a whole.

5) The teachers were most seriously concerned with situations related to Morality and Integrity. About one-sixth of their ratings included situations related to Aggressive and Antagonistic Behavior and about the same portion of the ratings were directed at situations related to Withdrawing and Recessive Behavior.

6) The three chief types of annoying situations were those classified as Classroom Decorum, Application to School Work, and Aggressive and Antagonistic Behavior.

7) Situations related to Morality and Integrity and to Withdrawing and Recessive Behavior were considered more serious than annoying; and those related to Classroom Decorum, to Application to School Work, and to Aggressive and Antagonistic Behavior as more annoying than serious.

8) Teachers with the greatest amount of training considered situations related to Morality and Integrity less serious than teachers with lesser amounts of training.

9) The oldest group of teachers considered Withdrawing and Recessive Behavior situations more serious than the youngest group. Teachers with the most training considered these situations more serious than teachers with less training.

10) Teachers with most training considered situations related to Aggressive and Antagonistic Behavior as more annoying than teachers with the least training.

11) The two older groups of teachers considered situations related to Withdrawing and Recessive Behavior more annoying than the youngest group of teachers. The most experienced teachers considered these situations more annoying than the least experienced teachers.

12) The findings suggest that elementary-school teachers show more real differences in their attitudes toward behavior of children than in their treatment of such behavior.

THE RELATIONSHIP EXISTING BETWEEN BILINGUALISM AND RACIAL ATTITUDE*

GRANVILLE B. JOHNSON, JR.

Emory University

In many regions of the southwest United States there are groups of people who find it necessary to use two languages for normal social intercourse: Spanish in the home and English in schools and in business transactions. As in most bilingual situations, one language is given more social acclamation than the other, since it is representative of the more dominant culture.

The study of language may be much more than language study, *per se*, since it is justifiable to assume that language is a reflection of the personality structure of the individual.[1] If personality does, as Frank assumes, "organize experience in terms of its own private idiosyncratic world of meanings,"[2] one may conclude with him that it is logical to extend this assumption to include an individual's choice of language for self-expression as one aspect of personality.

The purpose of the present investigation was to determine the relationship existing between the bilingual background of Spanish subjects and the attitude of the Spanish toward the Anglo ethnic group.

SUBJECTS AND MATERIALS

Materials.—

1) The Projective Test of Racial Attitudes composed of six carefully selected pictures relevant to race situations and provocative of projected response was utilized for the analysis of racial attitudes.

2) A tabulation sheet was utilized for recording the dynamics of responses.

3) The Hoffman Bilingual Schedule

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* This is the final article of a series of three concerned with the origin and development of racial attitude. The first, "An Experimental Projective Technique for the Analysis of Racial Attitude," appeared in April, 1950, issue (41: 4). The second, "The Origin and Development of the Spanish Attitude Toward the Anglo and the Anglo Attitude Toward the Spanish," was published in May, 1950 (41: 5).

Subjects.—

1) Anglo: thirty male subjects (four-, eight- and twelve-year levels, N = 90) from public schools in a southwestern town.

2) Spanish: thirty bilingual male subjects (four-, eight- and twelve-year levels, N = 90) from public schools in a southwestern town.

A further limitation was that members of both groups were required to have lived in this specific town for the year prior to testing.

METHODS OF MEASURING BILINGUALISM

Means of measurement of bilingualism may be classified into three categories: (1) Background questionnaires, (2) Association techniques, and (3) Rating scales.

1) *Background Questionnaires.*—Prescott, in 1932, described a bilingual questionnaire of twenty items which covered questions concerning oral and written language influence in the child's family background.[3] He assigned a numerical value to each significant item; the sum of these values represented the individual's foreign language index. Other questionnaires of similar character (e.g., Hoffman, 1933) have developed since this time.

The technique employed in the present investigation utilized the Hoffman Bilingual Schedule.

2) *Association techniques.*—M. Gali of Spain has proposed two methods for the measurement of degree of bilingualism. The first of these methods is a test of immediate verbal memory. Two parallel series of ten words—ten in Spanish and ten in Catalan—are orally presented to the child, each series being read three times with a fixed time interval in between the words. At the end of the presentation the children are requested to reproduce on a piece of paper the words which they are able to recall.[4]

Gali utilized the chain association method in which he presented eight words in Spanish given alternately with eight in Catalan. The subject responded with any word in either of the two languages which occurred to him within a fixed time.[5]

Saer employed an association method to measure the affective value of words in the two languages of the bilingual individual. Fifty words representing situations, persons, objects and actions that normally are part of a child's world at the age of three are selected. These fifty words in English and their equivalents in Welsh . . . without any definite order of presentation as to

the English or Welsh words are given to the child individually. The responses given in either language are noted. Account is taken of the association time for each word in each of the two languages. The association time for the Welsh word is divided by the time of the association for its equivalent in English. This quotient is equal to 100 when the association times for the two responses are equal. A score of less or more than 100 will indicate the greater or smaller affective value of the situation, object, person, or action in one or the other of the two languages. A quotient of approximately 100 will show that the child is truly bilingual in reference to the particular situation, object or person denoted by the word.[6]

3) *Rating Scales.*—Degree of language assimilation represents a continuum extending from zero to one hundred per cent. Malherbe divided this continuum into six progressively comprehensive stages, thus making it possible to compare roughly the two languages of a bilingual individual. In the study the Hoffman Bilingual Schedule was employed to measure the bilingual background of the Spanish subjects.

The test in its final form presented the following questions to which five responses were possible: Never, Sometimes, Often, Mostly, Always:

1) Do the following speak to you any language other than English? (a) Father. (b) Mother. (c) Grandfather. (d) Grandmother. (e) Brothers and Sisters. (f) Relatives.

2) Do you speak to the following any language other than English? (a) Father. (b) Mother. (c) Grandfather. (d) Grandmother. (e) Brothers and Sisters. (f) Relatives.

3) Does your father speak to the following any language other than English? (a) Mother. (b) Brothers and Sisters.

4) Does your Mother speak to the following any language other than English? (a) Father. (b) Brothers and Sisters.

5) Do your Brothers and Sisters speak to the following any language other than English? (a) Father. (b) Mother.

6) Do the following read any newspaper in a language other than English? (a) Father. (b) Mother. (c) You.

7) Do the following read any books in a language other than English? (a) Father. (b) Mother. (c) You.

8) Do the following write any letters in a language other than English? (a) Father. (b) Mother. (c) You.

9) Are letters written in a language other than English received in your home?

10) Do the following attend lectures given in a language other than English? (a) Father. (b) Mother. (c) You.

11) Do the following attend the theatre where plays are given in a language other than English? (a) Father. (b) Mother. (c) You.

12) Are radio programs which are given in a language other than English listened to in your home?

13) Do you do your thinking in a language other than English?

14) Are there any books in a language other than English in your home? [This question is answered: (a) None. (b) Some. (c) Many. (d) Most. or (e) All.]

The major conclusions Hoffman drew from analysis of the test are in summary:

Validity, found by correlating the bilingual scores against ratings as to the extent of bilingual background is .73 = .03

Coefficient of correlation between bilingual scores and estimates of bilingual background based on interviews is .82 = .03

Validity was established by demonstrating that the test differentiates between groups whose extent of bilingual background is relatively unknown.

Retest reliability coefficient (interval of three weeks) is .81 = .02

Reliability (split-halves) is .845. When corrected by Spearman-Brown, the coefficient is .92 for the total schedule.

There appeared to be no relationship between bilingual background and chronological age or with grade status for ages ten to fourteen and grades V to VIII.

No sex difference in regard to either size or variability of the bilingual scores was reported.

This test was administered to each Spanish subject at the time of the presentation of the Projective Test of Racial Attitudes. It was found, early in the investigation, that the Spanish administrator was more satisfactory than the Anglo. This was in part because of his knowledge of the Spanish language and culture.

PROCEDURE

The purpose of the present investigation was to determine the relationship existing between the bilingual background of the

selected Spanish subjects and the attitude of the sample Spanish at the chosen age levels toward the Anglo ethnic group.

The method of procedure used to ascertain this relationship was to derive the prejudice score from each of the Spanish protocols of the Projective Test of Racial Attitudes and correlate it with the bilingual score of the Hoffman Bilingual Scale.

RESULTS

Table I presents the mean and standard deviation of the selected Spanish subjects on the Hoffman Bilingual Scale.

TABLE I.—THE MEAN AND STANDARD DEVIATION OF THE SPANISH SUBJECTS ON THE HOFFMAN BILINGUAL SCALE

		M	σ_m	σ
Age Levels	12	181.001	9.078	48.885
	8	157.900	10.382	55.905
	4	104.512	9.501	51.165

Though the technique for establishing bilingual background was identical throughout the age groups, the Spanish at the twelve-year level were revealed to possess a greater (though not significantly so) bilingual background than subjects at the eight-year level, and the eight-year was greater than the four. It is possible to explain this feature on the basis that, though the frame of reference set up for the study excluded all subjects who had not lived in the community for a year, this at the four-year level represented a minimum of one-fourth the total experience of the subject. This weighting decreased progresssively with age. It was more possible, therefore, at the older levels, for the subject to have spent eleven-twelfths of his life in rural districts with their concomitant emphasis on the Spanish language.

The relationship existing between the bilingual score and the total prejudice score yielded the results found in Table II. It is observable from this table that the rectilinear relationship existing between bilingual background and prejudice increases progressively with age. The eta correlations were made to ascertain if any curvilinear functions were present. It may be noted that the *Nxy* did not deviate significantly from rectilinearity, but the *Nyx* demonstrated that, at the four-year level, decreasing progressively through the eight and twelfth years,

TABLE II.—DEGREE OF CORRELATION BETWEEN THE BILINGUAL SCORE AND TOTAL PREJUDICE SCORE OF THE RACIAL ATTITUDES TEST FOR EACH OF THE SPANISH AGE LEVELS
N = 30 FOR EACH AGE LEVEL

		r	σ_r	Nyx	σ_{Nyx}	Cor. Nyx	x^2 Nyx	Lev. of Sig. x^2Nyx	Nxy	σ_{Nxy}	Cor. Nxy	x^2 Nxy	Lev. of Sig. x^2Nxy
	12	.2600	.1731	.4433	.7640	.1492	.0772	−.5180	.1680	8.9660	15.3381	.50	.50
Age	8	.1687	.1804	.6421	.7320	.1091	.0862	.3442	.2676	11.1161	13.1160	.40	.50
Level	4	−.1706	.1820	.7520	.6401	.0807	.1072	.5943	.1158	23.2700	8.1741	.02	.90

there is a tendency for those subjects with least prejudice to have the highest and lowest bilingual scores.

Though this curvilinear function at the four-year level is possibly reflective of parental disposition, it indicates, nevertheless, that a profound knowledge of the Anglo culture or no knowledge of it at all yields least bias toward it. Possibly, with less bilingual background, the Spanish become part of the Anglo culture and in many cases identify themselves with it. This tendency might explain the finding previously discussed for many of the younger Spanish subjects to be prejudiced in favor of the Anglo.

To analyze this problem in greater detail, the degree of correlation between the bilingual score and each of the following categories was computed: Effect of Environment, (Frustrating); Reaction to Environment, (Frustration); Adequacy of Principle Character, (Subordinate); Ending Hero, (Defeat); Ending Hero, (Victory); and Ending Theme, (Unsatisfactory).

These correlations bore out the findings of the total analysis: the rectilinear relationship between bilingual background and prejudice tends to increase with age; but at the four-year level, decreasing progressively through the eighth and twelfth years, those subjects with the highest and lowest bilingual scores have the least prejudice.

At the four-year level, the rectilinear relationship between prejudice and bilingual background was negative, the Nxy is insignificant, and the Nyx is at the .30 level of significance. This last finding would indicate that those individuals at the four-year level with the most and least bilingual background had the least tendency to end the theme unsatisfactorily. At the eight-year level, however, those subjects with the highest and lowest bilingual backgrounds had equal prejudice. At the twelve-year level the curvilinear (Nyx) relationship (significant at the .01 level) was the reverse of the findings at the four-year level which would indicate that, at the oldest age level, those individuals with the greatest and least bilingual backgrounds tend to end the theme unsatisfactorily between the Spanish and Anglos. This finding could possibly indicate that the twelve-year Spanish with low bilingual backgrounds realize the barrier between the Spanish and Anglos and consider resolving it with pessimism. Those Spanish with intensive bilingual backgrounds,

however, may end the theme unsatisfactorily at this level as a result of increased social intercourse with the Anglos who are quite prejudiced at this age. This contact touches the Spanish ego, and ending the theme unsatisfactorily may be a negativistic device utilized to resolve tension.

The rectilinear correlation which shows greatest increment from younger to older levels is that concerned with the adequacy of the principle character. This would indicate that, with age, the relationship between bilingual background and feelings of superiority increases. It is possible that feelings of 'national' pride along with ego involvement and identity may explain this finding.

The rectilinear correlations which deviate from the general trend are found only in Adequacy of Principle Character, (Subordinate) and in Ending Hero, (Defeat). This would indicate that as age increases there is less tendency for subordination and defeat of the hero to be associated with a high bilingual background score. This factor, too, may be explained on the basis of pride resulting from frustration.

SUMMARY AND CONCLUSIONS

The purpose of the present investigation was to determine the relationship existing between the bilingual background of the Spanish subjects and the attitude of the sample Spanish at the chosen age levels toward the Anglo ethnic group.

The method of procedure used to ascertain this relationship was to derive the prejudice score from each of the Spanish protocols on the Projective Test of Racial Attitudes, and compute the degree of relationship between it and the bilingual background score of the Hoffman Bilingual Schedule.

It was noted that the rectilinear relationship existing between bilingual background and racial prejudice increased progressively with age. Curvilinear analysis demonstrated that, at the four-year level, decreasing progressively through the eighth and twelfth years, there was a tendency for those subjects with least prejudice to have the highest and lowest bilingual scores.

Though this curvilinear function at the four-year level was possibly reflective of parental disposition, it indicated, nevertheless, that a profound knowledge of the Anglo culture or no knowledge of it yielded least bias toward it. Possibly, with less

bilingual background, the Spanish become part of the Anglo culture and in many cases identify themselves with it. This tendency might explain the finding for many of the younger Spanish subjects to be prejudiced in favor of the Anglo.

REFERENCES

1) Helen Sargent. "Projective Methods," *Psychological Bulletin*, Vol. 42, p. 266.

2) Loc. cit.

3) Seth Arsenian. "Bilingualism in the Post-War World," *Psychological Bulletin*, Vol. 42, February, 1945, p. 70.

4) Arsenian, p. 71.

5) Arsenian, p. 71.

6) Arsenian, pp. 71–72.

INTRAUNIVERSITY VARIATIONS IN GRADING PRACTICES

BERNARD M. BASS

Louisiana State University

There has been an increasing interest among psychologists concerning criterion relevance and reliability. College grades are a criterion for many test validation studies as well as the basis for evaluating 'How to Study' courses and educational counseling programs. Grades also serve as predictors of success in graduate schools, professional schools and industry. Yet, relatively little information is available concerning the extent to which non-achievement factors contaminate the assignment of college grades.

The present study involved a three-component analysis of variance of mean grades[1] assigned by thirty-three departments[2] at three course levels[3] for four continuous semesters at a large state university. This analysis held constant the number of grades contributing to a given mean by treating the means only. Contributing to the formation of the three hundred ninety-six means were 139,659 grades assigned in the four semesters from the Fall of 1947 to the Spring of 1949.

Table 1 shows the analysis of variance of the three hundred ninety-six mean grades and the appropriate F ratios obtained.

The null hypothesis that no interaction existed could be rejected at the one per cent level of confidence. It was inferred that at different course levels, different departments deviated significantly in mean grade assigned from the course level average for all departments. For example, two departments actually graded more severely, in the absolute sense, in their junior-senior courses than in their freshman-sophomore courses while two departments assigned lower grades in graduate courses than in junior-senior courses.[4] Only seven of the thirty-three

[1] Mean grades were obtained by assigning four points to each A awarded by a department at a given level, three points to each B, two points to each C, one point to each D and no points to each F awarded.

[2] Only departments giving courses at all academic levels and teaching at least five hundred students each semester were selected for this analysis.

[3] Freshman-sophomore, junior-senior and graduate levels.

[4] See below concerning the average increase in mean grades at successive levels.

departments consistently graded lower than the level averages at all three levels and only six departments graded higher than the level average at all three levels. Thus only thirteen departments of the thirty-three studied seemed to maintain the same relative intradepartmental evaluation standards at all levels of instruction.

TABLE 1.—ANALYSIS OF VARIANCE OF THE GRADING SYSTEM

Source of Variance	SS	d.f.	*V*
Among departments (*d*)	17.1741	32	5.367
Among course levels (*l*)	73.7550	2	36.878
Within cells (*wc*)	9.3982	297	.032
Interaction (*dxi*)	16.0367	64	.251
Total	116.3640	395	

$$F = \frac{V_{dxi}}{V_{wc}} = 7.930 \qquad P < .01$$

$$F = \frac{V_{d}}{V_{dxi}} = 2.141 \qquad P < .01$$

$$F = \frac{V_{l}}{V_{dxi}} = 147.156 \qquad P' < .01$$

The variance associated with changes in course levels was significantly greater than the interaction at the one per cent level of confidence. The mean for all graduate courses was 3.48 or B+, the mean for junior-senior courses was 2.87 and the mean for the freshman-sophomore level was 2.43. It was inferred that the mean grade change from level to level was significant above and beyond changes due to departmental variations and semester fluctuations.

The null hypothesis that the variance of means among departments could be accounted for by the interaction variance was rejected at the one per cent level of confidence. It was inferred that above and beyond semester fluctuations and variance associated with increasing course levels, departments had differing mean grades. For example, three departments' freshman-sophomore averages were higher than a fourth department's graduate average. The range of mean grades of departments as a whole was from 2.46 to 3.42.

Assuming that the grading practices at the one university studied are common to many others, the results of this study suggest to the writer that perhaps those working on further refinements of scholastic aptitude tests may increase the efficiency of the tests in the future by developing series of regression equations specific to individual departments and course levels.

In the evaluation of 'How to Study' courses there is a need for more detailed matching of experimental and control groups. The greater mean increase in grades of the experimental group may accrue from the interaction between departments and levels. More of the experimental than the control group may take courses in departments whose grading practices become much more lenient at succeeding levels. Department and level should be included in any matching that is done.

This study also suggests the need to consider the possibilities of revising present college grading practices.

NOTES ON THE COEFFICIENT OF AGREEMENT

J. WILLIAM DUNLAP

School of Public Health, Harvard University

On numerous occasions situations arise where a number of individuals are required to rate or rank a group of items, objects, or individuals. Distributions of the ratings assigned the several items, objects, or individuals reveal varying degrees of spread, representing heterogeneity or disagreement among the raters. The degree of failure to agree can be estimated by inspecting the distributions. The disagreement can be quantified by measuring the deviation about the mean rating. Two standard statistics are available for this purpose, the mean deviation and the standard deviation. The first of these weighs the deviations linearly, and the second, by a function of the sums of the squared deviations. The latter function has the advantage of being a more elegant statistic, but is more difficult to compute. In this respect, the mean deviation is simpler, and it has the further advantage that when dealing with ratings which are of unknown reliability, of not giving undue weight to extreme deviations.

A situation which often arises is one where the research worker in dealing with the laity needs to express the degree of agreement as a percentage function to facilitate comparisons. There is no readily available function for so doing, but such a measure can be derived from either the mean deviation or standard deviation. The former has been selected here, because of simplicity of calculation and the nature of the material to which it is to be applied.

The mean deviation is the sum of the deviations about the mean, without regard to sign, divided by the number of observations. The magnitude of the mean deviation is strictly dependent on the sum of the deviations. In the case where N individuals rank a given item or person, the sum of the deviations can be readily obtained by adding the $N/2$ largest rankings and subtracting from this sum the total of the $N/2$ lowest rankings. The maximum disagreement between two raters occurs when one rater places item or person first and the second places it last. Therefore, the maximum disagreement within a group of raters occurs when half rate an item first and half rate the same item

last. That is disagreement is a maximum when it equals

$$N/2(H-L). \tag{1}$$

Where: $(H-L)$ is the greatest possible range between rankings, i.e., the highest possible rank minus the lowest possible rank.

A measure of disagreement is provided by the following expression:

$$\frac{\Sigma T - \Sigma B}{N/2(H-L)} \tag{2}$$

Where: T is the top fifty per cent of the rankings and B is the bottom fifty per cent of the rankings.

Since this expression is a measure of disagreement, it follows that when disagreement is greatest the result equals one, and when the raters are in perfect agreement the result is zero. This can be adjusted so that we have an expression of agreement expressed as a percentage, as shown below:

$$\text{Coef. of Agreement} = 100\left[1 - \frac{\Sigma T - \Sigma B^{*}}{N/2(H-L)}\right] \tag{3}$$

An example will clarify the application of the formula:

Rank	Item A	Item B
1	//	
2	//	
3	/	/
4	/	
5		////

For Item A the three lowest ranks, given by the six raters are 1, 1, and 2, the sum of which is four, and the three highest ranks are 2, 3, and 4 which total to nine. The greatest possible range $(H-L)$ is 5 minus 1 which equals four and N equals 6. Therefore, substituting in (3) we have the C.A.

$$\text{C.A.} = 100\left[1 - \frac{9-4}{6/2(5-1)}\right] = 58\%$$

For Item B the three lowest ranks are 3, 5 and 5, totalling to

* Note that the differences in both numerator and denominator can be treated as pure numbers with regard to sign.

thirteen, and the three highest ranks are 5, 5 and 5 which total to fifteen. The greatest possible range is four. Substitution yields the following:

$$\text{C.A.} = 100\left[1 - \frac{15 - 13}{6/2(5-1)}\right] = 83\%$$

In conclusion it should be emphasized that Coefficient of Agreement is a pragmatic but practical function, useful in working with business and other personnel not versed in the intricacies of statistics. Unfortunately no sampling error is available for the function nor is the writer competent to provide one.

BOOK REVIEWS

DOUGLAS H. FRYER AND EDWIN R. HENRY, Editors. *Handbook of Applied Psychology*. New York: Rhinehart & Co., 1950. Vol. 1, pp. 380. Vol. 2, pp. 462.

These volumes contain five units dealing with the application of psychology (1) to group and individual efficiency and adjustment; (2) to business and industry; (3) to education; (4) to clinical problems; and (5) as a profession. For each of these, at the end of the second volume, a bibliography is provided listing major publications in the area as conceived by the contributors. At the beginning of Volume One, there is a three-page list of landmarks of professional psychology beginning with 1860 (introduction of psychophysical methods by Fechner) and ending in 1939 (publication of the *Dictionary of Occupational Titles*). In all, there are one hundred fifteen sections grouped into eighteen chapters.

How should a handbook be judged? Validity of organization is one criterion. On this ground, the five major sections of the handbook seem equitable. Another criterion is the allotment of space to individual topics within each major heading—here we find the articles of roughly equal length, three to five pages, with some exceptions that seem justified in the light of how much more we know in these fields. What about the stature of the contributors—are they well known, not without some eminence in the fields on which they write? Here we find a verdict somewhere between superior and excellent. To have Remmers writing on attitudes, Tinker and Paterson on typography and legibility in reading, Shartle on job analysis, Richardson on effectiveness of selection devices, Traxler on school classification, John Anderson on child development, Seidenfeld on physical disease—to pick only a few almost at random—is to show that the editors have the felicity of judgment and the persuasiveness in getting good men to work that are indispensable for the success of such an enterprise.

What about mechanical setup? The table of contents is complete and clear, and so is the alphabetical list of contributors. The typography is pleasant, dignified, appropriate. The index of contributors is of dubious value except, perhaps, for the contributors themselves. The subject index ought to err on the side of overcompleteness; we are willing to forgive uneven generality of categories if we can generally find whatever we want. But it is

not hard to put this index to tests it cannot pass. For example, the entry under "Item Analysis" refers solely to the section by Wherry on item analysis and tells us nothing about the excellent page that Flanagan presents, under "Educational Test Construction," on the selection of test items. Where would one look if one wanted to read about "homogeneous grouping," or "ability grouping," or "grouping" under any name? There is nothing in the index under these titles, and the major section on these matters, "School Classification" by Traxler, would never be found through the index if one looked under "Classification." Similarly, there are additional treatments of school classification by Gordon V. Hendrickson and by Carter V. Good, who discuss instruction in elementary and secondary schools, and in college and university, respectively. No one could ever discover this by looking into the index.

What about the adequacy of references to the literature? After all, a handbook can give us merely an entering wedge for serious work. To get more deeply into a problem, we need to go to the sources the contributors cite. Here we find, perhaps, the major shortcoming of these volumes. For some reason, they give us a "selected and classified bibliography in applied psychology" which omits most of the references by the authors of the various sections. You read that "Interest studies also have considered the correlation between degree of interest in a college course and the mark received (Fryer, 1927; Meenes, 1935; Kulp, 1935) and the effect of teacher popularity upon interest in school subjects (Corey and Berry, 1938)." You may immediately want to have the title and full reference to the respective publications of Fryer, Meenes, Kulp, and Corey and Berry. If you turn to the section on educational psychology of the bibliography at the end of Volume 2, you will find not one of these. Perhaps, if you look at the reading references at the end of the section, you find bibliographies, in the more general works listed, that will lead you to the relevant publications of Fryer and the others. But probably not. One wonders then what the purpose of the fifty-nine pages of bibliography at the end of Volume 2 may be. We can not find in them what the authors of the various sections refer to. Are they perhaps a selective reading list in which the authors of textbooks and the organizers of courses may find the most significant materials in a given field? But the bibliogra-

phy is too extensive for that. The irritated reader can only conclude that in designing the bibliography the editors, trying to save space, select, and organize, "o'erleaped themselves and fell on t'other side."

How successfully is duplication and overlapping avoided? Is there cross-referencing where necessary? Here again, our judgment cannot be favorable. For example, the editors allow both Hendrickson and Good to devote precious space to the problems of homogeneous grouping when these were already thoroughly accounted for by Traxler. On educational acceleration, why not substitute a cross-reference from Good's article to Pressey's and so save another half-page? Similarly, nothing is said in the section on exceptional children that will take the reader into the two chapters on clinical psychology dealing with mental deficiency, community child guidance clinics, speech difficulties, and the like.

What is the picture of applied psychology that one gets from this handbook? One impression is that of tremendous diversity. Applied psychologists have not feared to tread. Psychological warfare, ventilation, metropolitan police personnel, building illumination, railroads, radio and television research, visual efficiency, physical disease, the courts, prisons and penitentiary, the rehabilitation of the aged, librarianship, eugenics, the theater —these titles of sections suggest the range of human concerns and economic activities that applied psychologists feel qualified to deal with. Among the few areas untouched not only by the editors and their authors, but also by applied psychology itself, are agricultural work and politics. But from these volumes, one gathers courage to predict that, before many years, the applied psychologists will have sent out scouts, deployed their forces, and colonized these areas.

As is perhaps appropriate in writings on applied psychology, we get little of the systematic and theoretical flavor that permeates the efforts of psychologists who do not call themselves 'applied.' The assumptions, conceptualizations, constructs, theoretical frameworks, and chains of hypotheses that characterize psychology in general are here all right, but they are never made explicit and systematic. As we all know, the applied psychologist is out to solve practical problems. That this can be done, as some action researchers insist, without neglecting the task of building

systematic theory, would never be guessed from this handbook. Rather, we have a kind of 'interdisciplinary' approach in that many of the articles are concerned not so much with psychology as with the same practical, horsesense kind of intelligent attack on problems that any bright layman might undertake, especially if given a smattering of the introductory course and a few statistical techniques.

For readers of this JOURNAL, we consider in detail only the two chapters on educational psychology, which fill eighty-five of the large double-columned pages.

Chapter IX, Educational Psychology: Techniques of Educational Adjustment, begins with a section by Gertrude Hildreth describing the school psychologist's services: coördinating instruction, studying individual children, and dealing with the slow learner, the behavior problem child, failures in school subjects, reading disabilities, physical handicaps, and gifted children. She also outlines the psychological testing, observational, and interview techniques of school psychologists and their functions in promoting pupil-teacher relationships, curriculum adjustment, cumulative records, and home-school relations.

Arthur Traxler gives a circumspect analysis of the considerations involved in the classification of students into different grade levels and within single grades. Chronological age, age grade, mental age, IQ, reading, and achievement age, as well as various formulas, are described and succinctly evaluated as bases for the grade classification of pupils. Ability grouping within single grades, inter-age grouping, and automatic promotion are similarly treated. His discussion ends with a cogent advocacy of modern measurement and recording procedures integrated into a well organized guidance program as the way out of the dilemmas confronted in any more mechanical scheme of pupil classification. Similarly, adequate individualization of educational experiences depends in the final analysis on the ability, initiative, and imagination of the classroom teacher, above and beyond any classification scheme.

Percival Symonds' section on principles of child guidance begins with a distinction between preventive and corrective guidance and points to the uniqueness of every case as militating against the application of general rules. After a rapid summary of findings on the criteria of treatability, he discusses methods of

gaining the child's coöperation and the long-term nature of most readjustment processes. Since therapy is more and more considered a 'relationship,' attention to both the child and his parents is ordinarily called for. But different clinicians should work with different members of the family. The therapy thus undertaken can be aimed at the elimination of symptoms as in direct conditioning processes for curing enuresis; at removing frustrations as in changing a child's teacher or interesting him in a recreational group; or at the release of tension, change of attitude, and development of self-understanding as in psychotherapeutic interviews. As to psychotherapy, Symonds quotes David Levy's *Maternal Overprotection* with its discouraging findings concerning psychotherapy as compared with education, environmental change, advice, and demonstration. A brief statement on criteria of improvement, mainly concerned with the dangers of too early cessation of treatment, closes the section.

Morton Seidenfeld's section on the care and treatment of language deficiency describes the need for, organization, and functioning of the special training units set up by the Army in World War II to teach basic reading, writing, and arithmetic skills to the thousands of 'illiterate' young men inducted by selective service. After a straight-forward exposition of how the program operated, the author draws the lessons for civilian life that such skills are best taught to adults when built into the learner's life milieu, that utilitarian values must be stressed, that relatively large gains in knowledge should be sought quickly at the start to enhance motivation, and that the social problems in removing illiteracy are at least as worthy of attention as the educational ones.

T. Ernest Newland and Lester N. Myer, dealing with exceptional children, distinguish between the education and care of such children, offer a general definition of 'exceptional children,' and then briefly discuss the nature and incidence of mentally retarded, mentally superior, visually handicapped, acoustically handicapped, speech handicapped, and physically delicate and orthopedic cases. Their estimates of the percentages of American children in each of these groups are three, three, twenty-five hundredths, three, six, and two, respectively. The educational program for such children should deal with social and emotional adjustment as well as the three r's. Only about fifteen per cent

of the cases are presently cared for in special classes and schools; the other eighty-five per cent (almost two and a quarter million) are either in regular classes or unlocated. Psychological services deal with the discovery and examination of exceptional children and with making recommendations for their educational adjustment, especially their social and personality training. Urgent needs exist for publicity among educators concerning this kind of education, for the early examination and study of all children, and for research on the effectiveness of special education programs. Finally, the authors answer the questions, Why educate exceptional children? Why expend extra effort and expense in their interest?—in terms of humanitarian values both to the children helped and to society.

John C. Flanagan's article on educational test construction goes into the following topics: (1) basic principles of test construction, in which validity and 'efficiency' are defined; (2) outlines and specifications for tests; (3) writing and editing test items, in which four levels (facts, generalizations, applications, and significances) are described and illustrated; (4) the selection of test items, where he considers item validity (discrimination), difficulty, inter-correlation, time required, objectivity, face validity (acceptability), and answer defensibility; (5) the organization of a test, logically and typographically; (6) equating the forms of a test; (7) the scaling of raw score units; (8) techniques for scoring test items; (9) the provision of norms, in which he outlines five primary types of interpretation: absolute performance in terms of content, relative performance in terms of rank in a specific group, performance with respect to that of the average individual in various specified groups, performance with respect to the individual's own previous performance, performance with respect to the individual's performance in other fields; and (10) other factors in the interpretation of results (motivation, guessing or scoring errors, and accuracy).

Sidney L. Pressey's section on accelerated higher education defines acceleration as "moving through an educational program in a shorter time or at earlier stages than is usual," and then raises two questions: What are the most desirable ages for a given educational program? and What are the optimum rates of progress? His answers are based on historical precedent and on the findings of experimental studies. The general conclusion is that

acceleration has relatively satisfactory outcomes and that the major problem is how to overcome the "inertia of the enormous total institution of American education, which has made twelve years of pre-college and four years of college, and the usual school calendar, a basic pattern for student life and faculty habits of thinking . . . "

Chapter X, Fields of Educational Psychology, begins with a section on child development by John Anderson. After a brief historical introduction, Anderson delineates the interdisciplinary character of child study and the interplay of science and practice that have characterized the field. Research on young children has considered the child as the independent variable, studied the effects of environment on behavior, and examined behavior *in situ* through various observational techniques. Education of young children in nursery schools, training of professional workers, relationships of child development to general education, parent education, popular writing and radio, and clinical work with young children are the additional topics briefly characterized.

Gordon Hendrickson's section on instruction in elementary and secondary schools takes up generalizations derived from research on individual differences, readiness to learn, motivation, general patterns of teaching, audio-visual aids, and transfer of training. After pointing out the facts of intra-individual and intra-class variability, he describes our experience with ability grouping and individualized instruction and draws the conclusion that teachers should expect different levels of achievement from their pupils unless the goals are severely circumscribed. Under readiness to learn, we find the problem outlined with special attention to reading and algebra; the conclusion is that readiness depends not only on characteristics of the pupil but on the teacher's skills and other factors. Under motivation are considered the inadequacy of instinct doctrine and the findings from studies of praise vs. reproof, reward and punishment, knowledge of results, and individual vs. group competition; such studies too often neglect the learner's understanding of the learning situation. As to general patterns of teaching, the ones considered are the recitation and laboratory methods, projects and activities units, and the unit-mastery plan, in each case with a summary of evaluative research on the method; the general implication is that teaching success depends more on the adaptability of the teacher than on

any formal method. On audio-visual aids, we find condensed summaries of the research on the effectiveness of motion picture, radio and recordings; the general limitation of these devices in enforcing pupil passivity is pointed out. Transfer of training is treated first with a review of pertinent research of the more traditional kind and then, with more encouraging results, in terms of the carry-over from activity-unit and other newer type procedures; studies of the latter kind, properly considered relevant to transfer of training, have yielded encouraging support for those who seek positive transfer from classroom activities to intellectual, emotional, and social maturity. A final meaty paragraph gives us principles useful in securing maximum transfer.

Instruction in college and university is treated in a section by Carter V. Good. The topics he takes up are techniques of investigation, class size, ability grouping and acceleration, motivation, instructional methods, audio-visual aids, study procedures, procedures for adjustment of the inferior and the superior student, and examinations and marking. For each topic, surveys of the findings of representative investigations are given. From all this, Good sees needs for the evaluation in higher education of trends toward adjustment of the program to the individual student, toward comprehensive achievement examinations as substitutes for time spent in granting academic credit, toward organization of broader instructional divisions such as biological sciences or social sciences, and toward programs of general education.

The section on predicting success in college and university by Edwin R. Henry begins with the rationale of admissions programs and of the problem of selective admission, discusses criteria of success in college, and outlines predictive technique in terms of the well-known regression equation. The remainder of the section takes up the typical findings with such predictors of academic success as secondary-school record, secondary-school courses, college aptitude tests, personality measures, age at admission, size of family, part-time employment, and paternal occupation.

Horace B. English and George Nagy begin their section on "Professional School Admissions" by contrasting professional with liberal education in terms of the former's importance to the individual and society, the personality traits and abilities required,

and the greater need for ethical, social service motivations. Criteria of professional success are continuance in the profession, membership in professional associations, advancement, research and publication, reputation, and income. Among the selective procedures commonly used are academic record; achievement, aptitude, interest and personality measures; health, financial, sex, race, religious, and residential characteristics. Following this general survey, the authors summarize the practices and results that have been obtained in graduate schools, medicine, dentistry, nursing, theology, law, engineering, and teaching. The conclusion is that the best single predictor of academic success in professional training is previous academic grades; when combined with standard achievement tests, predictive accuracy reaches the limit possible with imperfectly reliable criteria. The greatest need in the field is to develop criteria less narrowly academic and more concerned with ethics, social outlook, character, drive, and personality.

William D. Glenn, Jr. and Wallace Gobetz, writing on "College Student Personnel Services," outline the student personnel point of view and the wide variety of jobs that are needed to perform student personnel functions on present-day campuses. The authors then give brief characterizations of the problems, findings, and procedures of student personnel workers in dealing with admissions, selection of curriculum, orientation, health, extracurricular activities, counseling, remedial work, financial assistance, placement and follow-up. A final paragraph on needed research points out the inadequacies of previous work and a host of problems that have been relatively untouched.

Outside of these two chapters on educational psychology, there are many sections in other chapters of interest to the educational psychologist. Among the most pertinent are sections on motivation and self-direction (Douglas H. Fryer), interest in work and play (Donald E. Super and Jack W. Dunlap), aptitude and intelligence (George K. Bennett), guided learning (T. R. McConnell and G. Lester Anderson), vocational and educational satisfaction (Robert Hoppock and Donald E. Super), administration of psychological services in public schools (Bertha M. Luckey), state administration in public schools (Warren W. Coxe), and administration of psychological services in college and universities (William D. Glenn, Jr., and Wallace Gobetz).

The section on guided learning by McConnell and Anderson defines learning, discusses its ubiquity and then outlines the process in terms of the eleven characteristics listed by Dashiell in 1935. The function of motivation, the variety of changes in behavior that learning may bring about, and transfer of training are sketched. Guidance in learning stresses the need for more than mere repetition—the importance of consequences or effects, the proper distribution of practice, difficulty, and organization. In learning an active skill, we need first to define its nature, and then by direct observation, or manual guidance, properly organized as to wholes or parts, in a situation maximally similar to that in which the skill will be used, to achieve a flexible pattern adaptable to the perceived demands of the situation. Under ideational learning, the authors stress the importance of meaningfulness and organization as perceived by the learner and then take up whole and part learning, practice techniques, and the nature of meaningfullness in learning. Forgetting is considered as the result of retroactive inhibition. Limitations to learning are characteristics of the learner such as his ability, various organic states, and physical and social surroundings. In general, the principles of learning are not invariant laws but rather expressions of significant considerations in the control of learning.

All in all, the editors and publishers of these volumes have done applied psychology a distinct service. These volumes may well become, if not the *vade mecum* because they are too bulky, at least a frequent source of quick acquaintanceships with dozens of areas. Graduate students, personnel men, thesis directors, and workers in the vineyards of applied psychology will find help here. And not least, the historian of students of industrial society will be fascinated by this handbook a century from now.

N. L. Gage

University of Illinois

Regina Mary Goff. *Problems and Emotional Difficulties of Negro Children.* New York: Bureau of Publications, Teachers College, Columbia University, 1949, pp. 93.

This study investigates the kinds of difficulties Negro children ages ten to twelve report that they experience because of their race. Ninety children in New York City and sixty in St. Louis

interviewed by a Negro investigator from January to July, 1946, reported an average of three difficulties. These were categorized into overt manifestations (direct ridicule, physical ill-treatment, and aggressive behavior) and subtle manifestations (discrimination, rude treatment, and indirect disparagement). Children were asked how they felt during these experiences, what impulses were aroused, what action they took, and what advice they received from parents. One hundred and fifty mothers (not necessarily mothers of children interviewed) were requested to relate difficulties on account of race reported to them by their children, the guidance given, and its effectiveness.

Comparisons were made of data by city, socio-economic level, and sex. A similarity in basic pattern of difficulties was found in New York and St. Louis although in New York subtle, indirect manifestations of prejudice and rude treatment were more common; and in St. Louis, the overt forms of discrimination. The most frequently reported difficulty was ridicule; next in rank was disparagement created by movie and radio stereotypes. Distribution of difficulties had negligible relationship to socio-economic level; however, low income children in exclusively Negro neighborhoods pay relatively greater attention to implied prejudice than do upper income children. Data suggest that girls are more sensitive than boys to manifestations of prejudice.

Ridicule and physical aggression arouse resentment and impulse to fight; discrimination and rude treatment arouse inferiority feeling. Relatively more low income children than upper income children report inferiority feeling aroused by movie and radio stereotypes. Indirect disparagement provoked resentment accompanied by an inclination to do nothing about it. Low income children exhibited no greater aggressiveness in response to race difficulties than upper class children. The author explains this unexpected finding on the basis of selective sampling. Low income children were obtained through listings of community centers which are probably attended by less aggressive children.

Parental guidance appeared to be ineffective. Author stresses need for parent education among Negroes. Instructions to withdraw were most frequently given by parents. They felt that churches were ineffective in improving race relations, were

skeptical of intergroup organizations, and favored more Negro teachers for Negro children.

Three illustrative interviews are presented. After reviewing her data the author concludes that Negro children desire to strike back in prejudice situations, but suppress their emotions and withdraw instead of taking active steps to face their problems. In the course of her discussion of the implications of her study she states: "It is apparent that the Negro child needs an enriched program of training which places more emphasis on the building of attitudes toward himself—attitudes especially of self-esteem, self-respect, and self-confidence."

The difficulties and pitfalls of the interview method as a technique of securing information must be considered in evaluating the findings of this study. Some of these are recognized and described by the author.

This exploration into an area of paramount importance for American society and particularly for education is commendable. It extends to a very narrow age range and generalizations made may give misleading impressions if this limitation is overlooked.

PHILIP M. KITAY

Adelphi College

ALGERNON COLEMAN, CLARA B. KING, CLARE BALLUFF, AND ROBERT H. FIFE. *An Analytical Bibliography of Modern Language Teaching*, Vol. III, 1937–1942. New York: King's Crown Press, Columbia University, 1949, pp. 549.

This volume continues the series of reports begun in 1928. It brings up to 1942 the lists of books, articles, reports, and bulletins concerned with progress in modern language teaching. Foreign language teaching abroad is omitted from the present volume. Each of the eight hundred fifty-three items included presents bibliographical material, a summary of contents and an evaluation of the contribution.

Some of the trends evident during the period covered are: an increase of emphasis upon the relation of modern languages to social sciences and their integration with cultural studies; a vigorous interest in achievement tests; appreciation of experimental results; a rising interest in Spanish and Portuguese;

increased emphasis upon oral training and an increase of public interest in foreign languages. The more extensive sections deal with (1) aims, materials and method, (2) curricula-syllabi, and (3) examinations and tests.

The summaries and evaluations are well done. This over-all view of trends in modern language teaching should be very useful to workers in the field.

MILES A. TINKER
University of Minnesota

(*Concluded from Inside Front Cover*)

something like uniformity of style, footnotes and bibliographical references frequently require considerable 'marking for the printer,' and this is difficult—if not impossible—where matter is single-spaced. Manuscripts should not be marked for type style—this is done in the editorial office.

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In contrast—A periodical librarian in Iowa writes: "*The Journal of Educational Psychology* is too great temptation to our students. We cannot keep it on the shelves, so when it comes to time for binding little is left to bind. Please send with bill all 1949 and 1950 issues except those for December." From Minnesota: "Enclosed is $1.00 for replacement copy of December 1950 *Educational Administration & Supervision*. This issue disappeared very suddenly just as we are ready to send the volume to the bindery." A West Virginia college librarian writes: "We find, unhappily, that two issues of the last volume of the Journal are missing from our files. Apparently, our students thought they wanted them more than the library did. If you can supply January and October 1950 numbers, send with bill in duplicate."

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